

the impaled individuals—through the cortex to the outside.

While no animals were observed actually to thrust the filament through their bodies in this way, in several cases they were seen to be pulling with force sufficient to cause a distinct papilla-like elevation on the outer surface and it was easy to see how a slightly stronger pull would have caused the tip to penetrate the cortex, thus impaling the struggling creatures.

In every case of attempted ingestion observed, however, the animals sooner or later abandoned the effort to escape by "climbing" the filament itself; then by turning one way and another, even whirling about the tip at times, they were able eventually to disengage themselves. Had they pulled on the filament while the tip was in the region of the thin cortex at the contractile vacuole, it is probable that penetration would have taken place more readily.

By their efforts to free themselves after becoming impaled the ciliates frequently produced great holes through their bodies much larger than the diameter of the filament. It seemed therefore that they might possibly have escaped by enlarging these holes through constant pushing and pulling until a rupture was produced at one side. None of them were observed to escape in this way although in some only a relatively narrow strip of cortex prevented.

One instance was noted, when the observations began, in which an individual was impaled with its aboral or dorsal side toward the base of the filament. It was near the end of a branch and by pulling on the part of the branch distal to it the animal was soon enabled to reach the end and escape. This exception to the rule can best be accounted for by supposing that the individual was accidentally stabbed through during the transfer to the slide with the pipette. In all the other cases observed, as noted above, the oral sides of the animals were toward the base of the filament.

As to the filament, its fungoid nature was

indicated by the entire absence of color. It appeared to be far more rigid than most of the zoogloal specimens and in fact its rigidity is attested by its effect on the protoplasm of its would-be devourer. The growing tips are seen to be rounded but tapering somewhat at the ends. The tapering and relatively rigid point would possess the necessary piercing powers to produce the results observed.

In addition the filaments grew with surprising rapidity. The one illustrated was about four millimeters long at the time it was drawn but an hour later the two distal branches were more than twice the length from their junction that they were at the time of drawing. The estimated growth during the hour was nearly half a millimeter and, in fact, the increase in length was so rapid as observed under the microscope that one could see the difference from moment to moment. The rapid growth, then accounts for the relatively great length and numerous branches that were found distal to the points where the pierced animals were still struggling.

Perhaps this case may be cited as an example of maladaptation on the part of *Stylonichia vorax*, its feeding instincts having led it to attempt the impossible, namely, to swallow an unswallowable object; and furthermore an object which, by reason of its adhering to the animal's protoplasm, set up in the struggle to free itself reactions which resulted in forcing the rigid point of the object through its body, making it a prisoner.

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